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RUNNING GEAR

Model: E52
Production Date: 03/00

Objectives of the Module

After completing this module, you should be able to:

- To identify which suspension components are aluminum on the Z8.
- To list the spring and sway specification increases for handling.
- To describe the braking system enhancements.

Front Axle

The Z8 front suspension is designed as a double pivot with spring over strut.

The axle principle of the E39 and E38 models has been re-engineered in order to achieve the desired sports and roadster-specific characteristics.

The front axle carrier is a welded aluminum structure consisting of extruded sections and reinforcement panels.

The front axle carrier is connected to the body by 6 bolted points.

The tension struts are also forged aluminum.

Hydraulic rubber mounts have been installed (tension rod bushings) in order to reduce axle vibration.

The struts are clamped to the spindle hub unit.

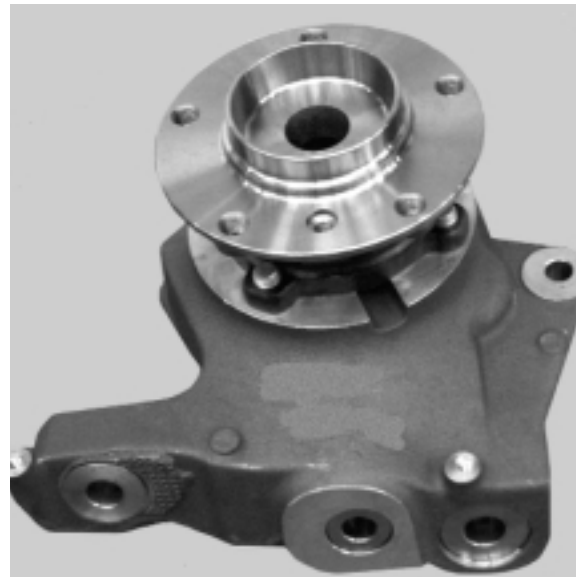
The upper pivot bearings (plates) are made of aluminum.

Suspension

The front struts are equipped with gas pressure shock absorbers.

The spring tuning is approx. 18% stiffer than on sedans. Due to the harder spring tuning, the spring compression range is 70 mm.

The anti-sway bar is 27 mm in diameter. This suspension design allows a low hood line to be achieved.



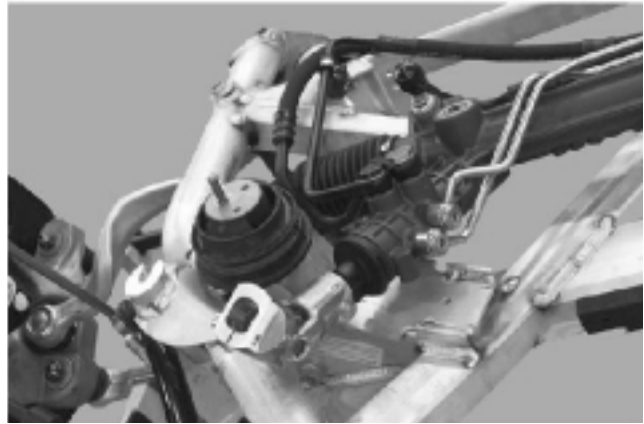
Steering

The Z8 is equipped with power assisted rack and pinion steering.

The steering gear is located in front of the wheel center and subframe cross member. This combination ensures correct steering characteristics and steering line accuracy.

The variable ratio of the steering gear provides a responsive feel under all driving conditions.

The Z8 is not equipped with Servotronic.



Rear Axle

The concept of the Z8 rear axle is known from the E38. The rear axle carrier is made of steel, similar to the carrier installed in the E38.

The rear axle is connected to the body by large-volume rubber mounts. Ball bearings are used in the lower control arm pivots, allowing for the hard longitudinal and transverse acceleration forces.



Suspension

Struts with centrally positioned springs are fitted on the rear axle.

The spring tuning is approx. 25% harder than on the E38 sedan. The spring compression range is 80 mm.

A 14 mm diameter anti-sway bar is standard.

Brakes

- The Z8 features a 2-circuit vacuum boosted brake system with a front/back split arrangement. The brake system has been adopted and modified from the E38 security vehicle.
- The front brakes are designed as a dual-piston floating calipers, and the rear brakes are single-piston floating calipers.
- The rotors feature a special coating (Geomet), improving corrosion resistance.

Brake Disc	Diameter	Thickness
Front	334 mm	32 mm
Rear	328 mm	20 mm

Note: Brake discs and pads are not directional.

Wheels/Tires

The following types of light alloy wheels are standard on the Z8:

Summer Tires (mixed tires)	
Front Rims	8 J x 18 LM
Rear Rims	9 J x 18 LM
Front Tires	245/45 ZR 18 96 Y
Rear Tires	275/40 ZR 18 99 Y
Winter Tires	
Rims	8 J x 18 LM
Tires	245/45 R 18 96Q/T/H M+S



- Only run flat tires are used with emergency running characteristics (refer to after sales publications for details).
- The Z8 is not equipped with a spare tire or M-mobility kit.

The DWS tire pressure warning system is standard. This system has a new acronym on the Z8, but is based on the RDW from the E39 M5. For specific details refer to the ST037 M5 handout.



Review Questions

1. List the aluminum suspension components.

2. What is unique about the Z8 steering gear?

3. What type of brake circuit (hydraulics) is used on the Z8?
